ABSTRACT

The object of the present invention is to provide a constant flow rate expansion valve which is sufficiently reduced in leakage of refrigerant. A constant flow rate expansion valve includes a refrigerant passage having a fixed flow path cross-sectional area smaller than that of a refrigerant inlet, a differential pressure control valve for controlling the differential pressure (P1 - P2) between an inlet pressure P1 and an intermediate pressure P2 generated by refrigerant flowing through the refrigerant passage to be constant, and a solenoid capable of setting the differential pressure by the value of an electric current externally supplied. In the differential pressure control valve, a piston and a valve element integrally formed with each other sense the differential pressure (P1 - P2), change a gap between the valve element and a valve seat such that the differential pressure is held constant, and adiabatically expand the refrigerant at the gap. Since the piston is fluidly isolated from the refrigerant inlet by a diaphragm, it is possible to completely prevent internal leakage of refrigerant via a sliding portion of the piston.